LETTER TO THE EDITOR

The Sonographic Patterns of Xanthogranulomatous Pyelophlebitis

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We enjoyed the review article by Drs. Kao and Wu [1] in the June 2008 issue of *Journal of Medical Ultrasound*, in which their experience in the evaluation of renal infectious diseases using ultrasound was presented. The authors also reviewed the pertinent literature. The review is very readable and could be an important reference for urinary system imaging experts. However, I would like to add certain points on the ultrasonography (US) patterns of xanthogranulomatous pyelophlebitis (XGP), which I believe are worthy of emphasis. XGP is a relatively uncommon chronic inflammatory disease of the kidney. This disease involves a chronic suppurative granulomatous infection in which chronic obstruction may play an important role. US is frequently requested to evaluate patients with clinical manifestations such as flank pain, fever, hematuria, flank mass, and urinary frequency. As mentioned by Drs. Kao and Wu, diffuse renal enlargement with a central echogenic foci representing calculus is a classic US presentation. However, there are still a number of patients who show a different pattern on US.

Since 1988, we have examined more than 50 patients with XGP in our ultrasound division. The kidneys affected by XGP are usually diffusely enlarged. This pattern accounts for about three-quarter of cases. In a review of 27 patients with XGP [2], we classified the US patterns of XGP into four groups:

1. Diffuse hydronephrotic XGP, 44% of patients (12/27): The diseased kidneys were enlarged because of the presence of hydronephrosis. Communications between the calyces and the pelvis were noted with the presence of internal echoes, representing debris or pus in the dilated collecting system. This was frequently associated with renal stones. The etiology of obstruction included ureteral stone, renal stone combined with ureteral stone, and neogrowth from the bladder.
2. Diffuse parenchymal XGP, 33% of patients (9/27): These kidneys showed enlargement but no strong sonographic evidence of pyelectasia. The parenchymal echo-pattern is diffusely distorted and replaced by hypoechoic areas representing necrotic tissue or xanthogranulomatous nodules. The dilated calyces presented as hypoechoic foci of variable sizes. The etiology of obstruction included staghorn stone (two cases), staghorn stone and ureteropelvic junction stone (two cases), nodular renal stone (two cases), and ureteropelvic junction stone (one case).
3. Diffuse contracted XGP, 15% of patients (4/27): Diffusely increased renal echogenicity was noted in the contracted renal parenchyma. Loss of corticomedullary junction was present.

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4. Segmental or localized XGP, 7% of patients (2/27): Focal mass with hypoechogenicity and the presence of renal stones were found. Localized perinephric fluid was present in 15% of all cases (4/27). With the exception of segmental XGP, the reniform shape is largely preserved in kidneys affected by XGP.

Because diffusely contracted kidney (15%) and segmental or localized XGP (7%) can be encountered, we would like to stress that these two patterns should also be kept in mind. We expect that Dr. Kao and Dr. Wu will agree with us and we look forward to their comments.

References

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